(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 580 537 A2**

(12) EUROPEAN PATENT APPLICATION

(21) Application number : **93500004.2**

(22) Date of filing : **21.01.93**

(51) Int. Cl.^{5} : **F16B 12/10**

(30) Priority : **21.07.92 ES 9201525**

(43) Date of publication of application :
26.01.94 Bulletin 94/04

(84) Designated Contracting States :
DE FR GB IT PT

(71) Applicant : **ULMA, S.COOP. LTDA.**
Obispo Otaduy, 3, Apdo. 13
E-20560 Onate (Guipuzcoa) (ES)

(72) Inventor : **Barrutia Urreta, Ramon**
Obispo Otaduy, 3
E-20560 Onate (Guipuzcoa) (ES)

(74) Representative : **Carpintero Lopez, Francisco**
HERRERO & ASOCIADOS, S.L. Alcalá, 21
E-28014 Madrid (ES)

(54) Improved cramp for joining modular form panels.

(57) The cramp is designed to join two modular form panels (4) with sections having side recesses (4') on which the cramp actually works, the latter comprising three parts, the first part defined by a tubular section (1) with which two side jaws (2) are integral, another part comprising a travelling section (7') on the mounting section (1), and having another pair of jaws (7) facing the jaws (2) and both having facing heels (3) that are housed in the recesses (4') of the sections (4) to join, the third part comprising a wedge (8) that crosses windows provided in both the sides of the mounting section (1) and the wings of the travelling section (7'). The wedge (8) is T-shaped and one of its wings (11) has a slanting edge that acts as the wedge itself, whereas the other wing defines ribs (12) on either side of the wing (11) to be housed in notches (6) with which the windows on either side of the mounting section (1) are provided to such end. The said notches (6) are slanting and offset on one side with regard to the other, in order that the wedge (8) can be inserted straight in its transverse disposition, the said wedge (8) having a tailpiece (13) at its free end to prevent the same from becoming detached.

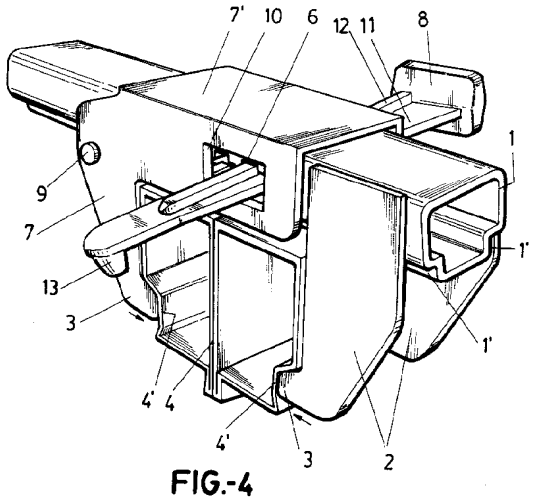

FIG.-4

EP 0 580 537 A2

OBJECT OF THE INVENTION

The invention relates to a cramp with which modular form panels can be joined to each other simply, efficiently and rapidly, the cramp comprising a pair of jaws that clasp and clamp the frame sections of the boards to join, one of the jaws being displaceable and hence travelling to and from the other, clamping being effected by a simple wedge.

BACKGROUND OF THE INVENTION

Many kinds of cramps are currently known and sold with which to fix or hold form module panels to each other. Of these, a particular type can be referred to provided with two jaws that have their facing edges stepped to hold the panel frame sections, with one of the jaws travelling along a mounting section to which the other jaw is fixed, and locked in a mounting position by a cross pin.

A number of problems and disadvantages are none the less derived from the above, namely a complex overall structure, a pin that is scarcely reliable in its final locking, and the jaws section is barely rational, which all leads not only to an economical cost in obtaining the cramp but to a product that can be improved to obtain a far better performance.

DESCRIPTION OF THE INVENTION

The cramp subject hereof is based upon the above-mentioned type of structure, i.e. it comprises three parts that will hereinafter be designated "male part", "female part" and "wedge" or mounting pin, and is characteristic in that the male part, which comprises two mounting jaws that are defined by two wings integral with a mounting section, has a heel at its free end facing another heel with which the two jaws in the female part are provided, the female part comprising a U-section that clasps and travels along the above-mentioned mounting section, guiding itself on the same because the two jaws on this female or travelling part have two inwardly projecting bolts reaching into grooves provided to such end on the mounting section, thereby acting as guide means for the said female part and moreover a pivoting means therefor. The two lateral faces upon which the jaws of both male and female parts and of the mounting section are moreover positioned, are provided with two longitudinal windows with notches towards either side, the aim being for the notches to be slanting and offset on one side with regard to the other in order to obtain a perfect fit for the relevant wedge or mounting pin, such comprising a lowered T-section with what could be designated the transverse branch having a skew longitudinal edge. This wedge crosses not only the windows provided on the sides of the mounting section but naturally also the windows provided on the side wings of the female part, i.e. the windows backed to and clasping the sides of the mounting section, one of the windows being singularly rectangular and the one opposite being provided with a notch on one of the end sides to house the edge of the skew wedge wing.

Thus, the sections of the panels to join will be located between the facing jaws and clamping will be effected by merely inserting the wedge across the facing windows of the female part and the male part, i.e. in the latter case of the mounting section, so that as the wedge is pushed the travelling jaw or female part will move and clamping will take place, as appropriate.

It should also be noted that the wedge or mounting pin has a tailpiece or transverse projection at its free end to prevent the said wedge from becoming detached once the aforesaid three-part assembly is mounted.

DESCRIPTION OF THE DRAWINGS

In order to provide a fuller description and contribute to the complete understanding of the characteristics of this invention, a set of drawings is attached to the specification which, while purely illustrative and not fully comprehensive, shows the following:

Figure 1.- Is a side elevation view of the cramp joining the two modular form panel sections to each other.

Figure 2.- Is a plan view of the actual cramp, the dash line showing the slanting and offset notches that form part of the longitudinal window provided on either side of the mounting section, the said figure also showing the peculiar shape of the actual mounting pin or wedge.

Figure 3.- Is a profile view of the assembly shown in the above figure.

Figure 4.- Is finally a general perspective view of the cramp of the invention joining the sections of two adjacent panels to each other, as shown in figure 1.

PREFERRED EMBODIMENT OF THE INVENTION

It is clear in light of the said figures that the cramp of the invention has a male part comprising a peculiarly shaped tubular section (1) and a pair of jaws (2) integral with two of the sides of the mounting section (1), the latter also having on what could be considered the lower edge of such sides where the jaws (2) are fixed, two steps (1') the purpose of which will be described hereinafter. The jaws (2) have heels (3) at their free end that shall reach into grooves or recesses (4') in the very sections (4) of the modular panels to join, as clearly shown in figures (1) and (4).

The sides of the mounting section (1) with which the two jaws (2) are integral are further provided with an elongate window (5) with notches on its longitudi-

nal edges making up successive T shapes, thereby for these notches, with reference number (6), to be slanting and slightly offset, as shown in figure 2.

The cramp is additionally provided with a second travelling part having two further jaws (7) identical to jaws (2) and likewise provided with the relevant heels (3) at their ends, the jaws (7) projecting from the ends of a U-section (7') that clasps and travels along section (1).

The cramp is further provided with a third part that consists of a pin or wedge (8) shaped and working as described hereinafter.

The inner face of the jaws (7) is provided with two bolts (9) that reach into the steps (1') on the mounting section (1), such steps (1') constituting the guiding means for the part comprising the jaws (7) and the U-section (7') from which they project to travel as a whole, preventing run-off during travel from the mounting section (1) and allowing the female part to pivot about the said bolts (9).

The side wings of the U-section (7') are provided with a rectangular window (10) and one of these is recessed at one of its shorter sides, which recess naturally faces the window (5) provided on that side of the mounting section (1).

The wedge or cross pin (8) is T-shaped and one of its branches (11) has its slanting longitudinal edge precisely acting as a wedge while the other branch defines ribs on either side which adjust to and are positioned in the notches of the window (5) of the side wings of the mounting section (1), the said pin or wedge (8) also having a tailpiece (13) that prevents the same from becoming detached once the said three parts are mounted.

In accordance with this structure when two modular form panels are to be joined to each other, with adjacent sections referred to as number (4) in figures 1 and 2, the jaws (2) and (7) shall face one another, and their heels (3) will be housed in the recesses or grooves (4') of the said sections (4) to join, whereupon the wedge (8) will be pushed to travel along the said notches (6) in the windows (5) of the mounting section (1), and the slanting and offset layout of the notches (6) will cause the wedge to drive or draw the female part and namely the travelling jaws (7) along the section (1), thereby for both sections (4) to be clamped and hence joined to one another.

It should finally be said that one of the windows (10) on the sides of the female or travelling part (7') is provided at one of its end sides, namely on the skew edge of the wing (11), with a central expansion-like notch, of considerably smaller width than the actual window (10), that is precisely positioned on the skew edge of the wedge (8) wing (11).

Claims

1.- A cramp for joining modular form panels, comprising a combination of three parts, one formed with a mounting section (1) and a pair of jaws (2) integral with the sides of such section, the other part consisting of a section (7') clasping and travelling along the mounting section (1), one of the ends of the travelling section (7') extending into two jaws (7) similar to jaws (2) and facing the same, the third part comprising a cross mounting pin or wedge (8), essentially characterized in that the travelling part comprising the U-section (7') and jaws (7) has a pair of bolts projecting from the inner face of the jaws (7) and reaching into longitudinal steps (1') provided on one of the longitudinal edges of the sides of the mounting section (1), constituting the guide means when the said travelling jaws are displaced; the actual sides of the mounting section (1) have been provided with windows (5) having notches (6) on both the longitudinal edges of the windows (5), the said notches (6) being slanting and offset on one side with regard to the other, thereby to allow straight insertion of the respective cross wedge (8), which comprises a T-section part with one of its branches (11) having a skew longitudinal edge, and the branch (12) defining two ribs on either side of the first branch for the positioning thereof in the notches (6) of the actual mounting section (1) windows (5).

2.- A cramp for joining modular form panels, as in claim one, characterized in that the jaws (2) and (7) are provided at their ends with two heels (3) facing each other, to be housed in the respective grooves or recesses (4') that the sections of the modular panels to join are provided with to such end.

3.- A cramp for joining modular form panels, as in the above claims, characterized in that the wedge (8) is provided at its end of smaller width with a projection (13) defining a means preventing the said wedge from becoming detached from the mounting section (1) windows (5).

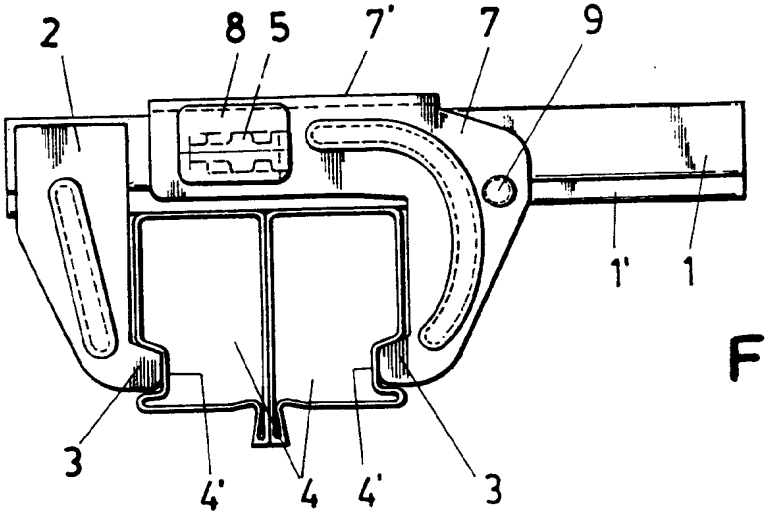

FIG.-1

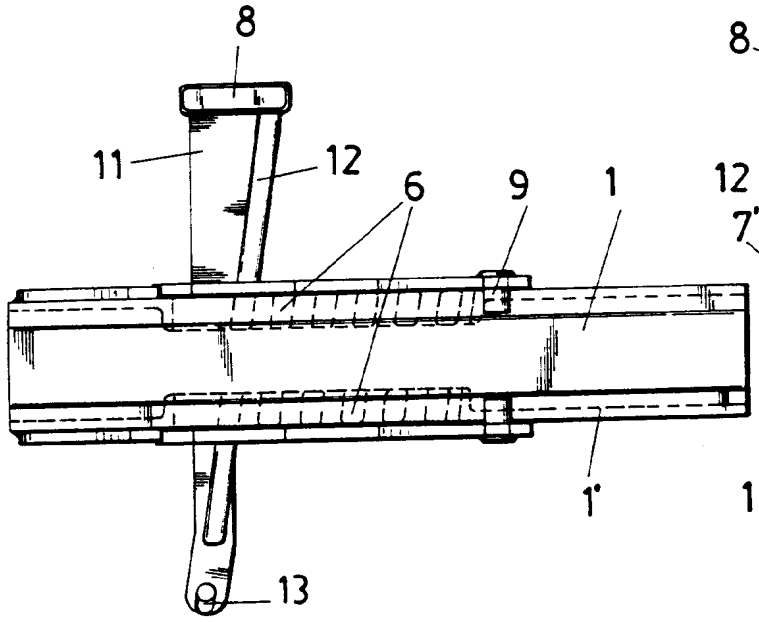

FIG.-2

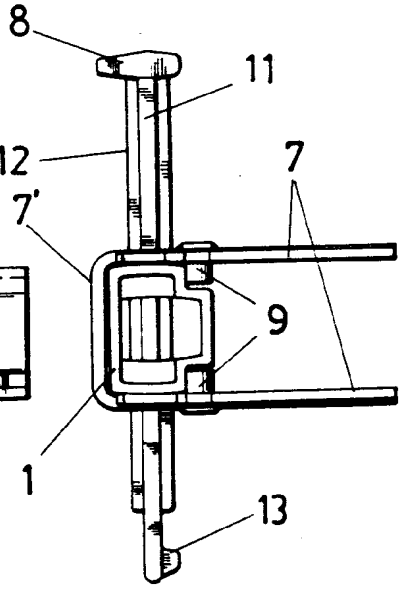

FIG.-3

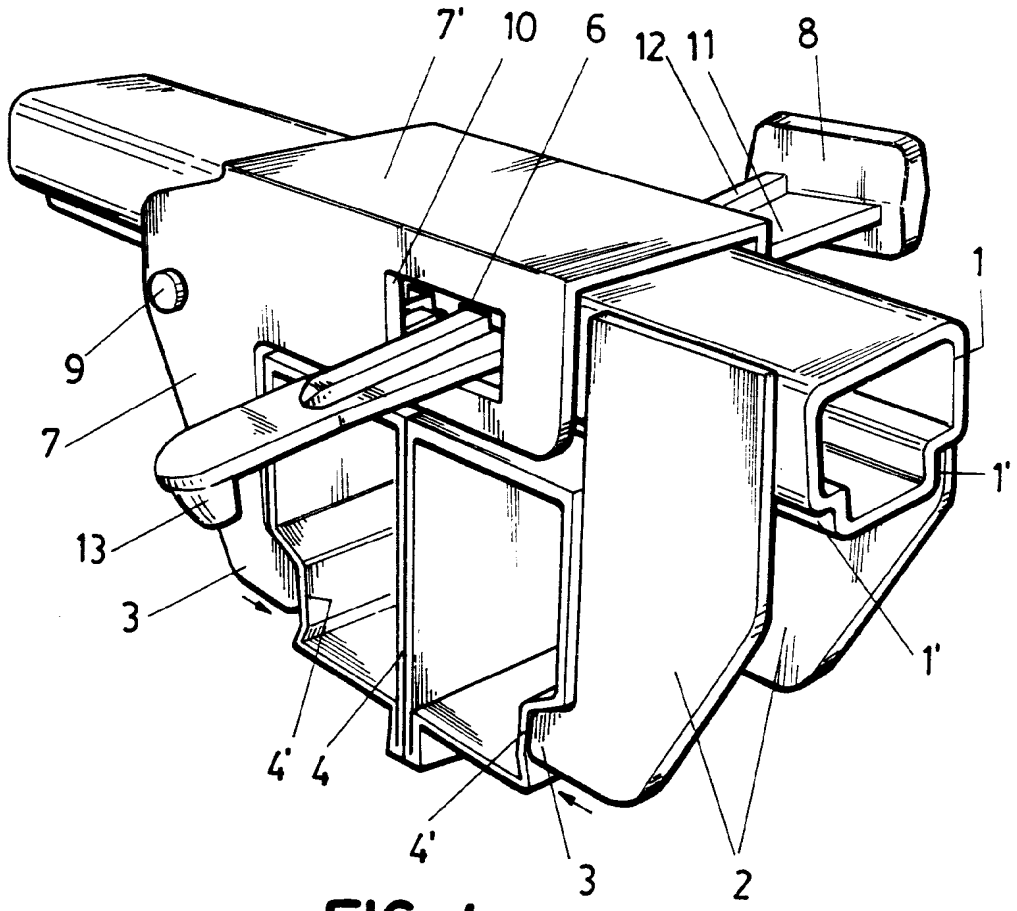

FIG.-4